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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/935,028	08/22/2001	Nicholas Paul Cowley	534334-014	9206
27805	7590	01/05/2005	EXAMINER	
THOMPSON HINE L.L.P. 2000 COURTHOUSE PLAZA , N.E. 10 WEST SECOND STREET DAYTON, OH 45402			PHU, PHUONG M	
			ART UNIT	PAPER NUMBER
			2631	

DATE MAILED: 01/05/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/935,028

Applicant(s)

COWLEY ET AL.

Examiner

Phuong Phu

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 2 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 17 December 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-9 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-7 is/are rejected.
- 7) ☒ Claim(s) 8 and 9 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>12/27/01</u> . | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### *Claim Rejections - 35 USC § 103*

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Limberg (5,852,477), in view of Waight (6,057,876).

-As per claim 1, see figure 1, and col. 5, lines 22-64, Limberg discloses a system having an input tuning range with a lower frequency limit and an upper frequency limit within a band located for television broadcasting wherein the system comprising:

an upconverter (3) for converting the input signal to an intermediate frequency signal whose frequency is higher than said upper frequency limit of said input tuning range (see col. 5, lines 27-33), and

downconverter (5, 7) for converting said intermediate frequency signal from said upconverter to in-phase and quadrature baseband signals (Re, Im).

Limberg does not disclose whether said upconverter having a local oscillator fundamental frequency which is greater than said upper frequency limit of said input tuning range.

Waight teaches using a local oscillator (25) for frequency upconverting (23) (see figure 1 and col. 3, lines 8-12).

Since Waight does not disclose how said upconverter is implemented, therefore, in an application for implementing said upconverter, it would have been obvious for one skilled in

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the art to implement said upconverter using a local oscillator in frequency upconverting, as taught by Waight. In Limberg invention, in view of Waight, the fundamental frequency of the local oscillator should inherently be greater than said upper frequency limit of said input tuning range in order to obtain said intermediate frequency signal whose frequency is higher than said upper frequency limit of said input tuning range, as required.

-As per claim 2, Limberg discloses that said upconverter is a upconverter for selecting a desired channel and said downconverter is a downconverter (see col. 5, lines 33-51).

-As per claim 3, Limberg discloses that said upconverter is a upconverter and said downconverter is a downconverter for selecting a desired channel (see figure 1).

-As per claim 4, Limberg in view of Waight does not disclose whether said upconverter is arranged to convert said input tuning range to an intermediate frequency range having a lower frequency limit and an upper frequency limit less than twice said lower frequency limit of said intermediate frequency range. However, it would have been obvious that the one skilled in the art, when building or carrying out Limberg invention, in view of Waight, upon his design preference and within his skills, could select such that said upconverter is arranged to convert said input tuning range to an intermediate frequency range having a lower frequency limit and an upper frequency limit less than twice said lower frequency limit of said intermediate frequency range, or arranged in another frequency arrangement for said intermediate frequency range, as long as said intermediate frequency signal whose frequency is higher than said upper frequency limit of said input tuning range, as required.

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-Regarding to claim 5, Limberg discloses that the system has an input (inputted to (3), said downconverter has an input (inputted to (5)), and there is no frequency filtering between said input of said tuner and said input of said downconverter (see figure 1).

-Regarding to claims 6 and 7, Limberg in view of Waight does not disclose first and second baseband filters for filtering said in-phase and quadrature baseband signals from said downconverter.

However, using a filter, e.g, a lowpass filter, for filtering noise and undesired signals, which might affect a system performance, out of the frequency band of system output, is well-known in the art, and the examiner takes Official Notice.

It would have been obvious for one skilled in the art, when building or carrying out Limberg invention, in view of Waight, to implement first and second filters, e.g., lowpass filters, for filtering noise and undesired signals from bandwidth of said in-phase and quadrature baseband signals from said downconverter if the noise and undesired signals occur and might affect further processing of the system.

#### ***Allowable Subject Matter***

3. Claims 8 and 9 objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

#### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Phuong Phu whose telephone number is 571-272-3009. The examiner can normally be reached on M-F (6:30-2:30).

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mohammad Ghayour can be reached on 571-272-3021. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Phuong Phu  
12/03/04

**PHUONG PHU**  
**PRIMARY EXAMINER**

Phuong Phu  
Primary Examiner  
Art Unit 2631